Alpine Entomology 1 2017, 39–41 | DOI 10.3897/alpento.1.20462

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Alpine Entomology

A new species of *Systenus* Loew (Diptera, Dolichopodidae) from Croatia

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http://zoobank.org/E769B1AC-385F-4797-B335-6DF2CA4F559D

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Received 20 August 2017
Accepted 13 September 2017
Published 20 November 2017

Academic editor:
Andreas Sanchez

Abstract

Systenus bartaki **sp. n.** is described from Croatia. The new species is similar to *S. tener* Loew and *S. vasilii* Grichanov, but it differs by characters of the antennae and the male genitalia.

Key Words

Dolichopodidae
Systenus
Croatia
new species

Introduction

The genus *Systenus* Loew, 1857 is present in all biographical regions and includes worldwide 36 species (Yang et al. 2006, Bickel 2015). In the Palaearctic region 10 species are known and a revised key was provided by Negrobov (2005). The systematic position of the genus is still differently treated – Negrobov (1991, 2005) placed the genus in the Systeninae while Bickel (1986, 2015) proposed a placement in the Medeterinae. Species of the genus are known to be tree-trunk associated and the larvae develop in tree-hole debris (Vaillant 1978, Oboňa et al. 2012). Since members of the genus *Systenus* are usually rare in collections, examples of rich local sympatry are of special interest. For example six species were collected at the same locality near Manaus, Brazil (Naglis 2000), five species were collected from a single tree in Germany (Diestelhorst and Lunau 2001), three species were collected at the same collecting site in Switzerland (Naglis 2014), and eight species were collected at the same locality in Costa Rica (Bickel 2015).

The material was collected by means of a Malaise trap situated in the village of Gornji Muć, located 15 km from the Adriatic coast in the hinterland of the city of Split. The trap was placed on a sunny hill slope named Grudina at 500 m a.s.l., in an orchard, at position 43°41'27"N, 16°29'44"E on the southeast foothills of the Svilaja mountain. The cold and dry mountain air from the northeast is mitigated with moist and warmish southern winds creating the Submediterranean climate vegetation zone with dominant *Quercus pubescens* communities. To the south the collecting place was close to the fields and slopes planted with vineyards and orchards and to the north it was open to a small wood and pasture

Material and methods

Dipterans were sorted by means of morphospecies method and voucher specimens were dried and mounted on cards. The material examined is deposited in the collection of the Czech University of Life Sciences Prague (CULSP).

Body length is measured from the base of the antennae to the tip of abdominal segment 6; wing length from wing base to wing apex. The positions of features on elongate structures such as leg segments are given as a fraction of the total length, starting from the base. The following ratios are used: relative podomere ratios: femur, tibia, tarsomere

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1/2/3/4/5; length of crossvein dm-cu to distal section of CuA (= CuAx ratio); distance between veins R_{2+3} and R_{4+5} to distance between R_{4+5} and M at costal margin (= RMx ratio). Describing the hypopygium, dorsal and ventral refer to the position prior to rotation and flexion, i.e. in figures top is morphologically ventral and bottom is dorsal. If not otherwise indicated, the coloration of hairs and setae is black. Morphological terminology follows Cumming and Wood (2009).

Morphological abbreviations: ac = acrostichal setae; ad = anterodorsal; dc = dorsocentral setae; pd = posterodorsal; ppls = proepisternal setae.

Systematic account

Description of the new species

***Systenus bartaki* sp. n.**

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Fig. 1

Type material. Holotype ♂: Croatia, Gorni Muć, 500 m, abandoned garden, MT [malaise trap], 43°41'27"N, 16°29'44"E, 24.viii.-14.ix.2014, B. Kokan leg. (to be deposited at CULSP).

Diagnosis. Antennal scape and pedicel yellow, postpedicel black, but basoventral 1/3 yellow, 3 times as long as basal height; arista 1/5 as long as postpedicel; veins R_{4+5} and M parallel in distal part; apical section of CuA 2.5 times as long as crossvein dm-cu; hypandrium curved, with a pair of long sinuous setae; cercus long and broad, triangular.

Description. Male. Body length (holotype): 2.0 mm, wing length 2.0 mm. **Head:** frons and face metallic green, with dense greyish pruinosity, narrowest distance between eyes about equal to the distance between ocellar setae; palpus yellow; proboscis dark brown; antennal scape and pedicel yellow; postpedicel (Fig. 1A) black, except basoventral 1/3 yellow, 3 times as long as basal height, with dense short hairs; arista apical, bare, 1/5 as long as postpedicel; postocular setae white. **Thorax**: mesonotum metallic blue-green shining, with grey pruinosity; thoracic setae black; 6 pairs of strong dc; ac short, consisting of 10-12 pairs; scutellum with a pair of strong marginal setae and 2 smaller lateral setae; 2-3 yellow ppls; pleura same coloration as mesonotum. **Legs:** including coxae pale yellow, hind femur with a brown dorsoapical patch, setae and hairs black except as noted. Fore leg: coxa with pale yellow anterior setae; femur, tibia and tarsomeres lacking major setae; relative podomere ratios: 40:40:20:10:7:4:5. Mid leg: coxa with pale yellow anterior setae; femur bare; tibia with a pair of ad/pd setae at 1/4; tarsomeres bare; relative podomere ratios: 49:51:27:16:10:7:5. Hind leg: coxa with a strong pale lateral seta; femur bare; tibia with a row of 5-6 short pd setae; tarsomeres bare; relative podomere ratios: 50:64:13:25:14:10:6. **Wing:** hyaline, veins brownish-yellow; R_{3+4} and M parallel in apical half; CuAx ratio: 0.4; RMx ratio: 1.5; lower calypter pale yellow, with yellow setae; halter pale yellow. **Abdomen:** metallic blue-green shining; hairs and setae brown. Hypopygium (Fig. 1B): epandrium dark brown; cercus and surstylus white, hypandrium yellowish-brown. Epandrium rectangular; hypandrium curved, with acute apex, bearing a pair of long sinuous setae; surstylus narrow and straight, with a basoventral and a basodorsal projection and with two subapical setae; cercus long, triangular, broadened medially.

Female: unknown.

Etymology. The new species is dedicated to the Czech dipterist Miroslav Barták.

Discussion

Systenus bartaki is similar to *S. tener* Loew, 1859 and *S. vasilii* Grichanov, 2002. All species share the following characters: veins R_{4+5} and M parallel in distal half; antennal scape and pedicel yellow. *S. bartaki* can be separated from the other two species by the short arista which is only 1/5 as long as the postpedicel, and by the postped-

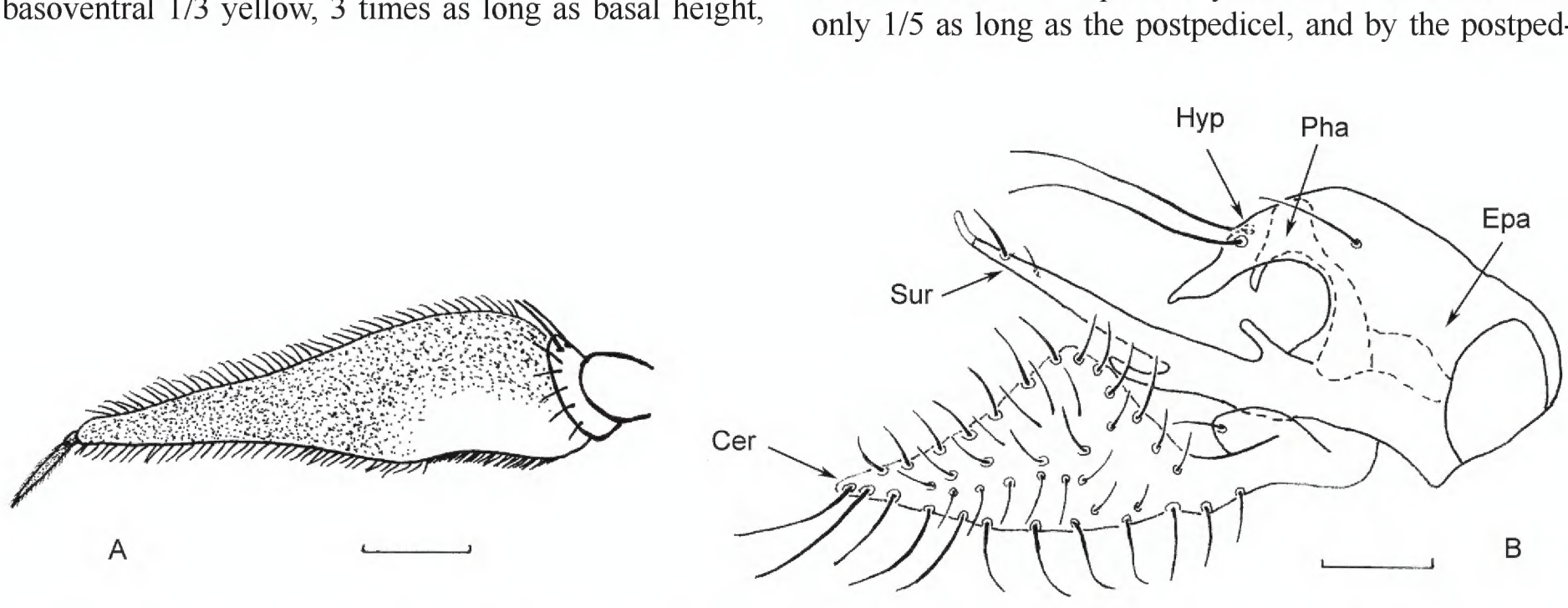

Figure 1. *Systenus bartaki* sp. n. holotype male. **A** antenna, left lateral **B** hypopygium, left lateral. Cer = cercus; Epa = epandrium; Hyp = hypandrium; Pha = phallus; Sur = surstylus. Scale bars: 0.1 mm.

icel which is 3 times as long as high. In *S. tener* and *S. vasilii* the arista is at least 1/2 as long as the postpedicel and the postpedicel is 2-2.5 times as long as high. The male genitalia of *S. bartaki* are similar to that of *S. vasilii*, but differ by the broadened, triangular cercus which is longer than the surstylus, and by the curved hypandrium bearing a pair of long, sinuous setae. In *S. vasilii* the cercus is ribbon-shaped, shorter than the surstylus, and the hypandrium is not curved and bears short setae (see fig. 3 in Grichanov 2002).

Acknowledgements

I am thankful to Miroslav Barták (CULSP) for the loan of the material and for information about collecting site and methods and to Bože Kokan (Natural History Museum Split) for collecting the material. Dan Bickel (Sidney), Oleg Negrobov (Voronezh) and Andreas Sanchez (Neuchatel) provided useful comments on the manuscript.

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